

## COMMODE SAFETY FRAME

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## Commode Safety Frame

### FIELD OF THE INVENTION

[0001] This invention generally relates to personal care products and, more particularly, to toilet or commode safety frames.

### BACKGROUND OF THE INVENTION

[0002] Safety frames provide assistance when entering, leaving or using commodes or toilets. They typically provide one or more handle portions that allow for grasping by a user when entering, using, or leaving a commode. One such safety frame is the Invacare® Toilet Safety Frame, model no. 1392. These safety frames are typically fabricated from circular tube constructions that are easy to assemble and cost-effective. Nevertheless, there is a desire for improved construction and fabrication of safety frames.

### SUMMARY OF THE INVENTION

[0003] According to one embodiment, a commode safety frame is provided. The safety frame includes, for example, first and second side frames and first and second safety bracket rails. Each side frame includes a circular tube portion that transitions to a first non-circular tube portion and at least one aperture disposed substantially in the middle of the vertical length of the first non-circular portion. Each safety bracket rail is in releasable communication with the first and second side frames, respectively, each includes a circular tube portion that transitions to a second non-circular tube portion and at least one biased detent protruding from a wall of the second

non-circular tube portion and disposed substantially in the middle of a vertical length of the second non-circular portion.

[0004]     BRIEF DESCRIPTION OF THE DRAWINGS

[0005]     In the accompanying drawings which are incorporated in and constitute a part of the specification, embodiments of the invention are illustrated, which together with a general description of the invention given above and the detailed description given below, serve to example the principles of this invention.

[0006]     Figure 1 is an exploded perspective of one embodiment of a commode safety frame.

[0007]     Figure 2 is an assembled perspective of the embodiment of Figure 1.

[0008]     Figure 3 is a front elevation view of the embodiment of Figures 1 and 2.

[0009]     Figure 4 is a rear elevation view of the embodiment of Figures 1 and 2.

[0010]     Figure 5 is a left side elevation view of the embodiment of Figures 1 and 2.

[0011]     Figure 6 is a top plan view of the embodiment of Figures 1 and 2.

[0012]     Figure 7 is a bottom plan view of the embodiment of Figures 1 and 2.

[0013]     Figure 8 is a cross-section view taken along section line 8-8 of Figure 2.

[0014]     Figures 9 and 10 are alternate embodiments of the cross-section view of Figure 8.

[0015] Figure 11 is a second embodiment with optional arm rests or handgrips 1100 and 1102.

#### DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENT

[0016] Referring now to Figures 1-7, one embodiment 100 of a commode safety frame is illustrated. The safety frame includes first and second side frames 102 and 104, safety bracket 122 with mounting plate 124, safety bracket rails 114 and 118, and extendable legs 126 and 128. As shown, the various components are primarily made of tubular construction. Side frame 102 includes a non-circular tube portion 106 and side frame 104 includes a non-circular tube portion 108. In the present embodiment, non-circular tube portions 106 and 108 are square or rectangular in cross-section and include at least one aperture 130 and 134 in a face thereof. Side frames 102 and 104 also include circular portions 110 and 112, respectively, which are received within the tubular legs 126 and 128.

[0017] Safety bracket rails 114 and 118 also include a non-circular tube portion 116 and 120, respectively. In this embodiment, non-circular tube portions 116 and 120 are also of square or rectangular cross-section and include a biased pin or detent 136 protruding from the face thereof. The biasing can be by any convention means including level springs or coil springs.

[0018] In operation, the non-circular tube portions 106 and 116 matingly connect so as to affix the side frame 102 to the safety bracket rail 114, which is ultimately affixed to the safety bracket 112. The mating arrangement is such that non-circular tube portion 116 is dimensioned so as to be able to be inserted within non-circular tube portion 106. The two components are releasably affixed together when pin

or detent 132 co-locates with aperture 130. The advantage provided by configured portions 106 and 116 as being non-circular in cross-section is that the mating connection is less prone to rotation and provides a more secure and reliable connection between the side frame 102 and the safety bracket rail 114. Once connected, to separate the side frame 102 from the safety bracket 114, pin or detent 132 is depressed thereby withdrawing it from aperture 130, which allows the two components to be separated. Side frame 104 and safety bracket rail 118 are similarly connected. Figure 2 illustrates the components of the commode safety frame 100 in the assembled state.

[0019] Pins or detents 132 and 136 are preferably located in the middle or center of non-circular portion 116 and 120 vertical length. In this regard, safety brackets 114 and 118 are generally of circular tube construction, which transition to a non-circular tube construction at portions 116 and 120. Non-circular tube portions 116 and 120 have a vertical length that is substantially the entire vertical component of safety bracket rails 114 and 116, respectively, except for a small bend which connects non-circular portions 116 and 120 to the bodies of safety bracket rails 114 and 118.

[0020] Similarly, side frames 102 and 104 are generally of circular tube construction and transition to a non-circular tube construction at portions 106 and 108. Non-circular tube portions 106 and 108 have a vertical length that is substantially the entire vertical component of the connection to safety bracket rails 114 and 116, respectively, except for a small bend which connects non-circular portions 106 and 108 to their respective side frames. Apertures 130 and 134 are also preferably located

in the middle or center of non-circular portion 116 and 120 vertical length.

[0021] Referring now to Figure 4, legs 126 and 128 include a plurality of apertures 402. Apertures 402 are used in combination a biased pin or detent 404 to set the height adjustment of the safety frame. In this regard, the height is fixed when pin or detent 404 enters any one of apertures 404. Depression of pin or detent 404 causes the pin or detent 404 to be withdrawn from the aperture 404 so that legs 126 and 128 can be vertically adjusted until the proper safety frame height is achieved. Pin or detent 404 is then fixed this height by once again entering the proper aperture 404. It should also be noted that non-circular portions 106 and 108 can include a plurality of apertures similar to those shown in legs 126 and 128.

[0022] Illustrated in Figure 8 is a cross-sectional view taken along section line 8-8 of Figure 2. As described earlier, non-circular portion 116 is sized and dimensioned so that it can be inserted into non-circular portion 106. As shown in the illustrated embodiment, the corners of the generally square cross-section of portions 106 and 116 do not allow any substantive rotation of the portions relative to each other. Similar results can be achieved by an non-circular cross-section. For example, Figures 9 and 10 illustrate that the cross-sections for portions 106 and 116 can be generally triangular (Figure 9) or elliptical (Figure 10). Other polygonal cross-sectional shapes may also be chosen.

[0023] Furthermore, the outer walls or surfaces of portions 106 and 108 need not be the same general cross-sectional shape as its inner walls or surfaces because these

outer walls or surfaces do not contribute to the non-rotational configuration. Similarly, the inner walls or surfaces of portion 116 and 120 need not be the same general cross-sectional shape as their outer walls or surfaces because these inner walls or surfaces do not contribute to the non-rotational configuration.

[0024] While the present invention has been illustrated by the description of embodiments thereof, and while the embodiments have been described in considerable detail, it is not the intention of the applicant to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications will readily appear to those skilled in the art. For example, The connections between safety bracket 122 and its rails 114 and 118 can be configured in the same manner as that between side frames 102 and 104 and rails 114 and 118. Therefore, the invention, in its broader aspects, is not limited to the specific details, the representative apparatus, and illustrative examples shown and described. Accordingly, departures can be made from such details without departing from the spirit or scope of the applicant's general inventive concept.